DOCUMENT RESUME

ED 086 350 PS 007 056

AUTHOR Strober, Myra H.
TITLE Some Thoughts on the Economics of Child Care Centers.
PUB DATE Aug 72
NOTE 43p.; Paper originally prepared for presentation at the Western Economic Association Meetings (Santa Clara, California, August 1972)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Child Care Centers; Cost Effectiveness; *Day Care Services; *Educational Economics; *Educational Theories; Employees; Family Income; *Federal Aid; Financial Policy; Parent Attitudes; *Working Women

ABSTRACT

In vetoing a comprehensive Child Development Bill in 1971, President Nixon voiced concern that the concept of child care centers had not been sufficiently discussed. It is in the spirit of contributing to such a discussion that his paper and its proposals are offered. The first part of the paper examines supply, cost, and demand for child care centers. Part II analyzes the economic rationale for government subsidization of child care centers and looks at two of the frequently proposed alternatives to a comprehensive system of extrafamily child care (payment to mothers to care for their own children and only AFDC mothers should be provided with child care centers). The final part of the paper examines the issues of "optimum" product, organization and financing of a child care system. (Author/CS)

FILMED FROM BEST AVAILABLE COPY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED 086350

SOME THOUGHTS ON THE ECONOMICS OF CHILD CARE CENTERS*

Myra H. Strober

Assistant Professor of Economics
Graduate School of Business
Stanford University

In March 1972, the labor force participation rate of married women, husband present, with children less than six years old, was 30 percent;[1] and in the same survey month, the labor force participation rate for divorced women with children under six was even higher, 62 percent.[2] The labor force participation rate for mothers with pre-school children has increased by ten percentage points since 1960.[3] It has been the most rapidly rising labor force participation rate during the past decade.[4] Or, looking at it from the children's standpoint, in March 1972, 5.6 million children under six had working mothers.[5] If trends continue, and they look as though they will,[6] the questions of how best to provide extrafamily child care and the economic ramifications of such care will become increasingly important. Yet, these questions have gone virtually unnoticed by economists.[7]

PS 007056

In vetoing a comprehensive Child Development Bill in 1971, President Nixon voiced concern that the concept of child care centers had not been sufficiently discussed. It is in the spirit of contributing to such a discussion that this paper and its proposals are offered. The first part of the paper examines supply, cost, and demand for child care centers. Part II analyzes the economic rationale for government subsidization of

child care centers and looks at two of the frequently proposed alternatives to a comprehensive system of extrafamily child care. The final part of the paper examines the issues of "optimum" product, organization and financing of a child care system.

I SUPPLY, COST, AND DEMAND

A child care or day care center may be defined as any facility open full-day (but not necessarily 24 hours per day), year-round, which cares for children up to the age of 14 outside of their own home, for pay. Nursery schools and other schools which are open only part-day and part-year are not part of the child care center network. Care inside the child's own home by a relative, a nurse, or a housekeeper and care outside the home by a relative is also excluded from the child care center network. This type of care will be referred to, loosely, as informal care. Foster homes are completely disregarded in our discussion. However, other private homes which care for children for a fee may be viewed as a particular type of child care center. These homes are usually called family day care homes and will be referred to as such in this paper. Family day care homes and child care centers will frequently be referred to as formal child care.

Supply - The supply issue may best be put into perspective by noting that the vast majority of children of working mothers are not cared for in either family day care homes or child care centers. The Westinghouse Day Care Survey indicates that in 1970 50 percent of pre-school children of working mothers and almost 80 percent of such children 6 to 14 were cared

for in their own homes. Only 20 percent of pre-schoolers and 5 percent of school age children (6-14) were cared for in family day care homes. And child care centers cared for only 10 percent of pre-schooler and .6 percent of school age children.[8]

The Westinghouse study for 1970 estimated that about 575,000 children received full day care in about 17,500 centers; 60 percent of these were proprietary and accounted for about one-half of the children enrolled in centers.[9] About 90 percent of all centers were licensed. The National Council of Jewish Women's Study (also called the Keyserling study), using HEW data, estimated that in 1970, 625,000 children were cared for in centers; however, many of these were cared for only part-day.[10] Family day care homes provided the remainder of child care slots, but the number of such slots was uncertain, since less than 2 percent of the estimated 450,000 homes were licensed.[11] Westinghouse judged that family day care homes provided full-time care for 695,000 children in 1970,[12] while the Keyserling study calculated that 2 million children were cared for either full or part-day in such homes.[13] A recent Women's Bureau publication reported that 11 companies operate child care centers. Together, these companies enrolled about 445 children.[14] In addition, the Amalgamated Clothing Workers have several child care centers in the Maryland-Pennsylvania and Chicago areas, accommodating about 1,000 children; the United Federation of Teachers, runs a center in New York City for about 285 children;[15] and several federal government departments run child care centers in Washington, D.C. Finally, in 1968, 98 hospitals operated centers which enrolled a total of 3,200 children.[16]

Cost

Studies "by the experts" indicate that extrafamily child care is expensive. We have cost figures from three sources for the 1968-71 period -- a joint study by the Childrens' Bureau and The Day Care and Child Development Council of America (CB-DCCDC), a study by Abt Associates of Cambridge, Massachusetts, and a budget proposed by the National Capital Area Day Care Association.[17] These studies place the annual cost per child in a "desirable" day care program, eight and one half hours per day, five days per week, 250 days per year (52 weeks, 10 holidays) at $2,300 to $2,400. (The cost of "desirable" care for 6-14 year olds before and after school and during the summer is estimated by CB-DCCDC at $653 per year per child).

"Desirable" day care was defined by CB-DCCDC as "including the full range of general and specialized developmental activities suitable to individualized development."[18] The Abt Study budgets provide for quality, developmental care with a teacher-child ratio of 1:5. The National Capital Area Day Care Association teacher-child ratio is 1:6. Minimum quality (custodial) and acceptable quality day care can be obtained for less, with minimum quality care costing about $1,300 and acceptable quality about $1,900 per year per child under 6 in 1968.[19] Almost all of the difference in cost between the three types of care is attributable to a higher teacher-child ratio.[20]

According to the studies referred to, the cost per child of acceptable or desirable care in family day care homes is not, contrary to what one might expect, any less expensive than the cost per child for such care

in centers. This is because the costs for quality care in family day care homes is based on the very low 1:4 adult-child ratio.

Why is child care so expensive? In particular, why is it so much more costly than per pupil expenditures by school districts, which were $783/year in 1970.[21] First, the child care centers discussed above have very high teacher-child ratios. The Federal Interagency Day Care Requirements, which day care center programs must meet if they are receiving funds from any of six federal programs, mandate a 5:1 ratio for 3 to 4 year olds, 7:1 ratio for 4 to 6 year olds and a 10:1 ratio for summer or after school care for 6 to 14 year olds.[22] Contrast this with the 25 to 30 children per teacher in most public schools, or the 10:1 ratio found, on the average, in San Francisco bay area nursery schools.[23] Secondly, in the studies quoted, figures for child care centers (and family day care homes) include the cost of medical and dental care, meals and snacks, clothing and emergency needs, parent activities and counseling, the employment of a social service professional, and training -- items often not included in school district budgets. Finally, child care centers run for three or four hours more per day and 80 days more per year than do the traditional public school systems.

But in fact, what parents actually spend on extrafamily child care and what quality day care costs are far from the same. As we have already seen, the majority of all formal child care occurs either in family day care homes or in proprietary centers. The Keyserling Study found that the average annual fee in proprietary centers was about $960 per child;

PS 007056

in family day care homes about $860 per child[24] -- a far cry from the $2,000 plus for the quality care we've been discussing. Most parents are simply not purchasing quality care. Fifty percent of all family day care homes surveyed were rated as only "fair" by the Keyserling Study. These homes, while meeting basic physical needs, provide very little, if any, developmental services. And 11 percent of family day care homes in that survey were rated "poor," i.e., not even meeting basic physical needs. Even among center care users, few are purchasing quality care. The Council rated 35 percent of all proprietary centers as "fair", 50 percent as "poor." And nonprofit centers, while providing more "superior" care then other arrangements were still rated "fair" in 50 percent and "poor" in 10 percent of the cases.[25] In addition, the quality of staff in most child care facilities is far different from the quality of staff discussed by the experts. For example, the CB-DCCDC study talks about one classroom professional per 50 or 20 students and budgets $6,600 per year for such an individual. But the Westinghouse study indicates that, "Most directors and teachers do not have college degrees and very few have had special training for day care work, e.g., courses in early childhood development."[26] The median annual salary for both directors and teachers is reported by Westinghouse to be about $5,300.[27]

Finally, many parents who were utilizing "developmental" child care services in 1970 were subsidized. As noted in the Keyserling report, most "superior" care was offerred by non-proprietary centers. And as Westinghouse points out, in 1970, only 22 percent of the revenue of non-proprietary centers came from parents.[28] Federal, state and local

funds and the donation of buildings and services by community groups have all been used to subsidize child care services.

Demand

The demand for extrafamily child care is extremely difficult to determine, in large part because the "product" varies so greatly from place to place and because the perception of "product" varies so greatly from mind to mind. But, given any particular product specification, including quality, location, hours of service, and degree of parental control of program, the demand for slots or hours of care may be expected to depend upon the following: number and age of children, family income and wealth, market wage or potential market wage of mother, "taste" (including, among other things, mother's commitment to employment, behavior of friends, and perceived desirability of pre-school education), and, of course, price. We do not attempt here to estimate demand. Rather, we seek to get a rough notion of the size of the maximum demand, assuming zero price, but restricting usage to certain specified groups of children.

We have already indicated that 5.6 million children under the age of six had working mothers in March 1972. As a measure of full-time demand for center care this figure is undoubtedly on the high side. Some working mothers work only part-time and others would undoubtedly wish to provide other types of care for their children even if center care could be obtained at a zero price. But the demand for center care clearly would be paramount. In the Westinghouse survey of families with annual incomes under $8,000 per year, only 36 percent of working mothers with pre-school

children said they desired no change in their current child care arrangements. And of the 63 percent who desired a change, half wished to utilize day care centers.[29] Moreover, expanding our list of "eligibles", handicapped or ill mothers might wish to take advantage of child care services, as might mothers going to school or doing community volunteer work. And, of course, the existence of extrafamily child care services might substantially increase the labor force participation rate, the school enrollment rate and/or the volunteer rate of mothers with pre-school children, even in the short run. We have no precise knowledge of the likely size of the increase in labor force participation or school attendance by mothers should appropriate child care become available. But, we do have some rough survey data on the question. A six-state study done in 1969, reported that 52-63 percent of non-employed AFDC women indicated that they would like to work in a steady job provided adequate child care were available.[30] Many of these women would undoubtedly require additional training before they could obtain the kind of work they might seek,[31] but presumably they would utilize subsidized day care services while obtaining such training. Inadequate child care seems to be a less important deterrent to labor force participation among women with somewhat higher incomes. Only 18 percent of non-working women whose family incomes were less than $8,000 per year and who had at least one child under 9 said they did not work because "they could not make (or afford) satisfactory child care arrangements."[32] Moreover, Westinghouse reported that only 27 percent of non-working mothers said they would prefer to utilize day care centers for their

children, 45 percent indicating their preference for care in the home. Non-working black mothers, on the other hand, preferred care in centers (52 percent) to care in the home (27 percent).[33]

The need for part-time child care services comes from two rather different groups. First, let us look at the demand for after school and vacation care among children aged 5-14 with working mothers. In April 1970, there were 40.7 million children in this age group.[34] Assuming that about 50 percent had working mothers[35] and that these mothers desired extrafamily child care, our demand would increase by about 20 million part-time places. Again, the demand might be further increased by greater labor force participation, school enrollment or volunteer work by mothers.

In addition to the desire for child care centers to meet the employment needs of mothers, child care centers have also been advocated to meet the developmental needs of children. This advocacy is particularly strong with regard to so-called "disadvantaged" children. According to the Keyserling Study there are approximately two and one-half million children under the age of six, whose families are "in poverty" and whose mothers are not employed.[36] These pre-school children, unable to afford but sorely in need of nursery school education, constitute the second group of potential part-time users of extrafamily child care.

In summary, at zero price, but restricting usage to mothers who work or whose children are disadvantaged, and assuming all mothers desired the particular "product" being offerred, we might expect a

demand for about 5.6 million full time places and 22.5 million part time places. If we allowed usage by children of mothers enrolled in school, doing volunteer work, ill or handicapped and/or if we considered the increase in these activities and in labor force participation by mothers once child care were available at a zero price, we would clearly have an even larger demand.

Using the cost figures for "desirable" care noted in the cost section we could calculate that at a zero price and maximum usage, the provision of child care for all children of working mothers and for all disadvantaged children would cost at least 30 billion dollars.[37]

In practice, of course, there would be no reason for the government to spend this much. While it would be impossible to eliminate all of the consumer surplus in setting child care fees, it would certainly be reasonable to set up a sliding scale so that almost everyone paid something toward child care and so that fees depended (at least in part) upon income.[38] When Westinghouse asked working mothers with family incomes under $8,000 per year what they would be willing to pay for the child care arrangements of their choice, only 16 percent indicated they could pay nothing.[39]

Nevertheless, it is obvious that considerable subsidization would be required for demand to be met. Economists frequently ask, why, if a demand for child care centers exists, the private market has not met the demand. The main reason why the private market has not met the demand for child care centers is that suppliers cannot run high quality

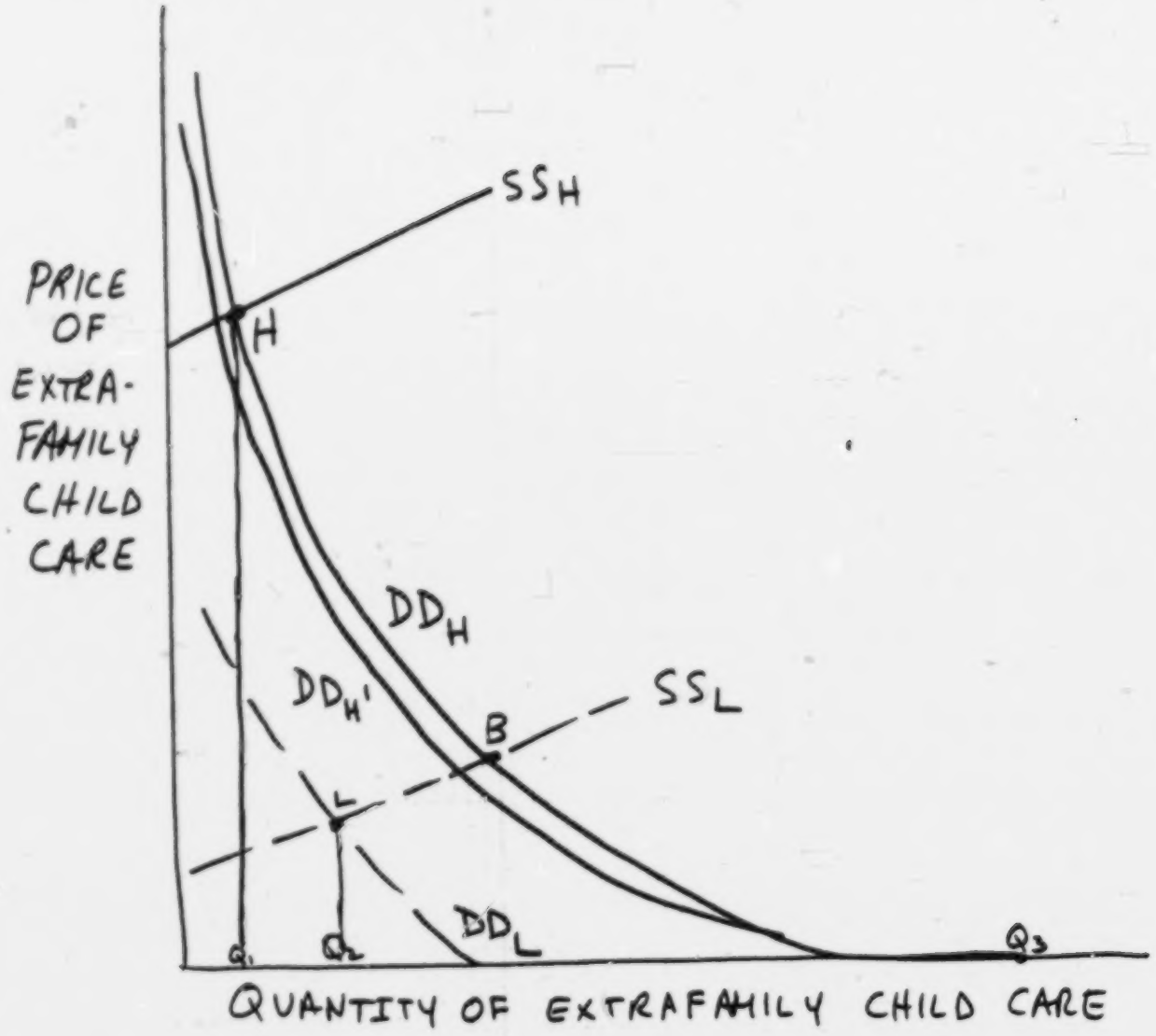
centers for profit if they charge the prices which demanders of high quality services are willing to pay.[40] Westinghouse indicates that, of those who could pay something toward child care, $520 was the median annual fee which working mothers said they were willing to pay for the kind of child care they desired.[41] This contrasts markedly with the $2,400 per year discussed in the section on cost. And even if we include higher income families, Mary Rowe's work suggests that less than 5 percent of families would pay more than about $1,000 per year per child for child care services.[42] Yet, most of the demand for day care services is a demand for high quality services. This is documented for low to moderate income families in the Westinghouse Study[43] and is undoubtedly equally true for higher income families. The private market for formal day care has failed because given an inability to purchase high quality formal care, mothers prefer to make informal arrangements or stay at home rather than purchase poor quality formal care.

The failure of the formal market is portrayed graphically in Figure 1. Here the child care center market is segmented into two sectors -- one providing high quality, and the other low quality services. The solid curves represent demand and supply in the high quality sector. DD_H and SS_H intersect at H. The demand from Q1 to Q3 is unmet. Some of this unmet demand is in the form of long waiting lists. Some is transferred to informal arrangements. And much of it is met by mothers who decide to postpone or forego their labor force activities. Low quality care can, however, be provided for profit at a much lower price. Hence, in Figure 1, the dotted line SS_L lies considerably below SS_H. But the demand for low quality care,

is relatively small (dotted line DD_L) so that while the price at point L is low, the quantity demanded at L, (Q_2) is also relatively small. If high quality services could be provided along SS_L the difficulties would be largely eliminated. An intersection of SS_L and DD_H at B (for bliss) would meet a good part of the demand for high quality services.

It should be noted, in addition, that the small quantity of high quality care now being consumed would be even smaller if not for subsidization. In the absence of subsidization DD_H would be replaced by DD_H1, so that H would move to the left.

A second, but clearly less important, reason why the market has failed is because for some families, in terms of location of services,[44] hours of services, provision of care during periods of illness and provision for parent input, the market has not provided the right kind of product at any price. The DD_H curve, and particularly the upper portion of that curve, might well shift to the right if the "appropriate product" were offerred. It is also true that by redefining the product it might well be possible to lower the supply price for high quality care. The question of the "optimum" product is taken up in Part III. However, we turn first to Part II and the question of government subsidization. For it is clear that no amount of product redefinition will change the fact that in order to satisfy the demand for high quality child care a subsidy will be required. The important question is then, why should the government subsidize child care centers?



THE FORMAL MARKET FOR EXTRAFAMILY CHILD CARE

FIGURE 1

II THE CASE FOR SUBSIDIZATION OF CHILD CARE CENTERS

There are two major arguments in the case for subsidization -- the equity argument and the externality argument. Primary reliance is placed here on externalities. However, the reader is warned that it is virtually impossible to quantify the external benefits in order to weigh them against subsidization costs. So in the end, one's decision on the merits of subsidization depends to some degree upon one's subjective estimate of the importance of the particular externalities.

Equity - Direct benefits from subsidization accrue to three groups -- children of eligible working mothers (and children of other mothers whose activites or misfortunes make them eligible for child care services), eligible mothers of young children, and potential employees of child care systems. The lower the family income, and the greater the number of young children, all other things being equal, the higher the subsidy (and hence the direct benefits) to eligible families. The equity argument is that a redistribution of income and services in favor of these groups ought to take place because these groups have been "wronged" in the past and/or because they are not as well off as other groups in the nation.

That children have been "wronged" in the past is not difficult to document. We are supposedly a youth-oriented culture, but in terms of programs for nutrition, health or education, our record of public interest in or expenditures on very young children has been poor. As for mothers, or women in general, it is clear that they have not been afforded equal opportunity or treatment -- in education, in jobs, or under the law.

The perpetrators of the discrimination are not particular teachers or employers but rather all of us, women as well as men, in our family as well as our occupational roles. A system of quality child care, it is argued, will enhance the well-being of children and move toward giving women equality in the working world.

With regard to teachers, it is contended that through no fault of their own, but rather as a result of a falling birth rate, an over-supply of people (mainly women) are trained for elementary teaching. These people, many of whom are unable to utilize their training in the current job market, would benefit from new job opportunities in an extensive system of child care centers. The benefits to society of utilizing these teachers' training are, of course, also considerable.

Equity arguments are clearly important in making a case for subsidization; but externality considerations are also vital and it is to analysis of external benefits that we now turn.

External Benefits - Mishan, in a recent review of the externality concept notes that a positive externality arises when "as an unintended or incidental by-product"[45] of some firm's or individual's activity another firm's or individual's production or utility is increased. There are at least five external benefits associated with expenditures on child care centers, and each will be discussed in turn.

Education clearly produces externalities, and the first, and probably least controversial, argument in favor of government subsidization is that part of what is being proposed in quality child care is education. Even if one is concerned about the fact that achievement or IQ benefits

as a result of pre-school education tend to fade,[46] there are other educational benefits of pre-school education which are worth investment, and which have external effects; specifically, the early detection of mental and physical difficulties, the early introduction of alternative forms of information and a wider scope of experiences, and the early opportunity for the child to enhance his or her self-esteem.

The second external benefit of expenditures on child care centers is long run and likely to affect young women and girls. As a visible system of high quality extrafamily child care develops, it will become possible for young women to realistically consider a new option -- market work as a permanent feature of their adult lives. These women will then be able to make realistic human capital investments in themselves. It is already true that work is a substantial part of women's lives, but because the child rearing years frequently require an interruption of market work, work horizons are often short and educational investments designed to maximize the return from work are substantially below what they might be.[47] This is not to say that all women would wish to utilize extrafamily child care. And surely we should take care not to put pressures, subtle or explicit, on women to commit themselves to market work during their childrearing years. Our national social welfare function, at least at the present time, still clearly has a place for women who wish to pursue full-time child rearing.[48] It is the option to do otherwise (to prepare for and engage in permanent market work) which is important. And it is through making this option possible for large numbers of women that extrafamily child care provides an external benefit. It is of course

also true that increased educational investment by some women would not only benefit the women involved, but would also allow society to more optimally employ its human resources.

A third external benefit of extrafamily child care would accrue to teenagers. An "optimum" system of child care centers (see Part III) would make provisions for teenagers to volunteer in centers and to obtain child care training in such centers through formal course work arrangements with high schools. Volunteering in a child care center might well provide teenagers with a sense of productiveness -- a sense which many teenagers claim they lack. In addition the training these teenagers would receive would clearly be helpful to them in their later role as biological parents, and possibly in their vocational planning process. Obviously, not only the teenagers themselves but society as a whole would benefit from their training.

Employers constitute a fourth group of external benefit recipients. By and large, employers have sought to "protect themselves" from presumed high rates of turnover and high absentee rates of women by paying women lower wages, and keeping them in female-typed jobs (which typically require little in the way of employer-financed on-the-job training). With regard to turnover, more research is clearly required, but it appears that separation rates for men and women of similar age and skill, employed on similar jobs, are about the same.[49] And in at least one recent California study, separation rates for men and women were found to be similar even when age and occupation were not held constant.[50] So employer efforts to "protect themselves"from higher turnover by women may well have been

unjustified. Indeed, it may be that by keeping women in low level jobs at low pay employers have increased female turnover beyond what it might otherwise have been. However, with regard to absenteeism, there does seem to be some evidence that women with children tend to have more absences than women without children.[51]

Employers are being required by law both to pay men and women equal pay for equal work and to open up heretofore virtually all male jobs to women. The financial penalties for non-compliance are becoming considerable. Given these legal requirements, (and the inability therefore to legally "discount" higher absentee rates for women with children) employers will benefit from a child care program -- and in particular from a program which provides care for sick children.

It is sometimes alleged that if child care centers increase the number of women who seek employment, some employers might also benefit by being able to lower wages.[52] Questions regarding the effects of increases in labor supply on wages and employment clearly need considerably more attention. For example, in order to determine which employers might benefit (and which workers might be harmed) one would have to specify the supply price of the new entrants, their quality, and the degree of competition in each labor market. However, far more important, and usually overlooked by those who fear increased labor force participation by women, is the demand side of the picture. The child care system will, itself, generate jobs; and the increased demand for goods and services associated with an increase in the labor force participation of mothers is also likely to be job-creating. It is not at all certain therefore that employers would lower wages or lay off existing personnel in the face of an increase in labor supply. However, if the new entrants to the labor force were of higher

quality than the marginal worker currently employed, some employers would have an opportunity to upgrade the quality of their work force.

Assuming that the availability of extrafamily child care increases the education level and/or the labor force participation of mothers, it is likely that a fifth external benefit will develop. In the long run, the existence of child care centers will probably result in a reduction in the birthrate -- thus increasing utility for all who find themselves already too crowded or fear crowding in the future. Let us review the circumstances under which such an external benefit would evolve.

As noted earlier, the option to work in the market without interruption may well induce girls (and women) to invest more heavily in themselves. And increases in educational investment would probably decrease fertility by changing tastes in at least two ways[53] -- by changing the quantity-quality trade-off for children and by encouraging labor force participation. In addition, increases in labor force participation, even in the absence of increases in educational attainment, would probably have antinatal effects. A note on the use of the term quality of children is appropriate here. It is probably impossible to objectively measure the quality of a human being; and it is certainly impossible to do so from afar. Quality, as used here, refers simply to the quantity of inputs (time, money, education, etc.) received by the child.

It is, of course, true that subsidizing child care would lower the price (in both money and time) of raising children and that the substitution effect of this price change would be negative (i.e. a fall in price would

result in an increase in the purchase of child care services). In addition, unless child services were an inferior good, the income effect of the price change would also operate toward increasing quantity purchased. But purchasing more child services as a result of the subsidization of child care centers does not by any means imply increasing the number of children born. The total volume of child care services is determined not only by number of children but also by quality of children.

A negative relationship between these two components of child care services is frequently observed. Gary Becker and H. Gregg Lewis have shown recently that, assuming parents desire an equal quality level for all their children, a negative correlation between quantity and quality will exist in consumption even if, in the household's utility or production functions, quality and quantity are no more closely related than any two commodities chosen at random.[54] In other words, there is a quantity-quality trade-off. Investment in children can be "widening" or "deepening." And there is evidence that higher educational attainment results in a preference for "deepening" investment.

In a recent article on child quality and the demand for children, Dennis De Tray, like many before him, found a significant negative relationship between level of female education and number of children born.[55] Unlike others, De Tray attempted to remove time price effects from this correlation. De Tray has shown that even with such effects removed a significant correlation between the variables remains. In addition he has shown that quality per child (though admittedly measured rather crudely as expected public school investment

per child) is positively related to female education. The hypothesis that more highly educated women become more efficient at the production of quality and thereby reduce the quantity of children they produce thus finds some support from De Tray's work.

Arleen Leibowitz, using household activity data, has also shown that there is a positive relationship between a woman's level of education and quality of children.[56] The quality measure in this case is number of hours spent on care of children (both total time spent and time spent per child). In families where the mother's education level is relatively high ($\geq$ 12 grade) mothers, fathers and also "other helpers" spend more time with children (and per child) than in families where mother's education level is relatively low.

The second effect of education -- an increase in labor force participation -- will also tend to decrease women's taste for number of children. Increases in education are likely to increase labor force participation for several reasons. First, education increases the opportunity cost of a woman's time (by increasing her potential market wage rate). Secondly, a greater initial stock of human capital increases the cost of depreciating that capital by withdrawing from the labor market. Thirdly, the greater initial stock of human capital, when combined with new legal requirements, may induce employers to provide additional on-the-job training for women, thus further increasing the opportunity cost of women's time. And finally, education may increase women's desire for certain psychological satisfactions of market work.

But even if the existence of child care centers does not encourage substantial increases in women's educational attainment it will surely encourage increases in women's labor force participation. And greater labor force participation, per se, would probably be antinatal.

We know that there is a negative relationship between wife's labor force participation and the number of children she bears.[57] We also know that increases in women's earnings are negatively related to number of children-ever-born.[58], (Even in the absence of increased educational attainment, increases in women's earnings can result from increased labor force experience.) Increased earnings certainly make it easier for a woman to have more children (for example by allowing her to employ household help). But while De Tray found a weak positive effect between an increase in male earnings and children-ever-born,[59] it is important to note the strong negative relationship between an increase in female earnings and fertility.

Of course, we do not know the direction of causality in these relationships. However, it seems plausible that women who are committed to labor force participation are more likely to become less efficient at the production of children (quantity and quality) and to develop tastes for "satisfactions" other than children. Or, as Glen Cain has put it, some women may, after working, become addicted to market goods.[60] Finally, given a particular level of child quality desired (and assuming that most women regard a certain amount of their own time as an essential, unsubstitutable, input in the quality production function), the fewer hours a women personally has available for child care (due to market work) the less likely she probably will be to dilute her quality input by having additional children.

To summarize, it is of course, true that, cet. par., a child care center subsidy will increase the purchase of child care services. But cet. is not par., because in the long run such a subsidy also changes tastes -- for education and for labor force participation. And increases in education level and/or labor force participation decrease the taste for children while increases in education level also change the composition of child care services purchased (toward quality and away from quantity). It is true that the amount of child care services purchased would be smaller if education and labor force participation increased without a child care subsidy. But such a situation is probably unattainable, for it is likely that the centers are required in the first place if we are to have further substantial increases in education and labor force aspirations. On balance, the taste changes described will almost surely outweigh the pure price effects of the subsidy.

Alternative Types of Subsidies - Before leaving the issue of subsidies, we need to look briefly at two repeatedly proposed alternatives to widely available extrafamily child care. Both of these require government subsidization; but both would cater solely to low income persons.

The alternative most frequently proposed, most recently by William Shannon,[61] is to pay mothers to take care of their own children in their own homes. Shannon notes that if the government paid $2600 per child, tax-free, to low income women, a woman with two children would "earn" as much by staying at home as she would in the market by earning $150 per week less taxes, social security, union dues, lunches, car fares, etc. Shannon's assumption is, of course, that the best child care can be provided by a

child's own mother, that what a mother and child do at home together is of greater value than what mother does at work plus what child does at a center. This assumption may in fact be far from true.

Legislators, and others, have, in some instances, expressed concern about the possible harmful effects of child care centers on children and on the family as in institution. But, the psychological evidence seems to be that quality child care is not harmful to children.[62] Moreover, the opportunity cost for children under a Shannon-type system may be very great. The child development aspect of child care centers cannot be met by family allowances. Even if we upgrade the quality of "mothering" by, for example, utilizing T.V. to training mothers in child development, we could never provide all mothers with the expertise of specialists in early childhood education. This is not to say that children require experts in child development twenty-four hours per day. But what opponents of child care centers forget is that even if a child spends fifty hours per week in a center (and in an "optimum" system -- See Part III -- he or she wouldn't) the child will still spend forty or more waking hours per week with parents. As for the strength of the family as an institution, the family may well be strengthened rather than weakened if mothers feel less alienated, less tied down and/or more competent as a result of training and work. It is sometimes argued, however, that child care centers are undesirable because they tend to increase the possibility of divorce by opening work options to unhappily married mothers. (The argument assumes that these mothers would otherwise stay married because of financial dependence on their husbands.) It may be that centers will make divorce more realistic for some women. But it is difficult to accept the argument that we should forego the benefits of centers to preserve unhappy marriages.

We should also point out that the opportunity cost to mothers of a Shannon-type system may be very great. Many women would prefer to be given the chance to work (by availing themselves of child care centers) rather than be paid to care for their children at home. By working or obtaining training they have the chance to increase their incomes above their child-rearing wage. They also have the opportunity to develop seniority and skills which may aid them in later work years when they are no longer entitled to a child-rearing wage. And finally, they have the chance to develop interests and friends outside the household setting. For many women, even those with relatively low earning abilities, the opportunity cost of staying at home may be more than they wish to pay.

Finally, none of the externalities we have discussed would exist under a Shannon-type plan -- no benefits to society via early childhood education, no benefits to young women or girls, no benefits to teenagers, or employers, and certainly no benefits with regard to lowering the birth rate. In fact a Shannon-type system is clearly pronatal with none of the offsetting effects of increased education or labor force participation discussed earlier. In summary, paying mothers to care for their children seems a far less desirable course of action than developing a system of quality extrafamily care. This is not to argue against a minimum income grant for the purpose of redistributing income. It is merely to say that such a monetary payment is not an alternative to a child care system.

A second alternative to a system of comprehensive child care centers comes from the Nixon administration, namely, that AFDC mothers only should

be provided with child care centers. This proposal, too, seems ill-advised.

If the sole motivation for child care centers is to reduce welfare costs, by getting AFDC mothers to work, legislators may be unwilling to spend any more on child care than they currently spend on welfare. In February 1970, the average annual AFDC payment per family was $2,140.[63] Quality child care for two pre-school children, using the figures cited in the cost section, is almost double that amount. Legislators may also not realize that labor market conditions and the low education level of most AFDC mothers make it unlikely that merely providing centers (or even providing centers and training) will substantially reduce welfare dependency in the short run. We have argued above that paying mothers to stay at home to rear their children denies opportunity to mothers who could benefit from child care centers and market work. It is equally true that providing centers and forcing mothers to enter the labor market denies equity to many, since, in the short run, not all AFDC mothers can benefit from seeking market work. The issues of child care centers and AFDC mothers, rather than being tied together, should be separated--especially since many AFDC children are in the "disadvantaged" group and should probably obtain the educational benefits of child care centers regardless of their mother's labor force status. The only realistic relationship between child care centers and AFDC mothers is of a long-run nature. If potential AFDC mothers grow up knowing that they will one day utilize child care centers, they may well increase their level of education, make more appropriate vocational decisions and thus be less likely to require AFDC.

It is also clear that providing child care centers for AFDC children only may well have some serious negative effects for young women who do not consider themselves potential AFDC mothers. For these women there would, of course, be no positive incentive toward improved career planning: But even worse, if child care centers came to be thought of as "for poor children only" young women who would ordinarily use these centers might become reluctant to do so.

And that point brings us back to where we began. For without the utilization and support of middle class families, the pressures on legislators to finance high quality care will be diminished; the probability would thus increase that child care centers for poor children only would be of poor quality.

III "OPTIMUM" PRODUCT, AND ISSUES IN ORGANIZATION AND FINANCING

We have already, in several places, alluded to the question of the optimum product and to issues of organization and financing child care systems. It is now time to examine each of these topics.

"Optimum" Product

There are, it would appear, at least three criteria for optimality in the design of the child care product. First, the product should conform as much as possible to parents desires. Second, a high level of quality should be achieved at minimum cost. And third, given a particular cost level, external benefits should be maximized. The system described below, I believe, meets these criteria.

I would envision an "optimum" system as a three-tier community system. The nucleus of the program would be a child care center which could accommodate 25, or 75, or more children, depending on the community need. Surrounding the center would be a network of family day care homes run by what I shall call community parents -- mothers and/or fathers who take care of children for part of the day. These community parents would be closely associated with the large, core center. They would receive training there,[64] work there several hours each week, and have a supervisor from the center come to their home for frequent evaluation. Association with a child care center would hopefully become a prerequisite for licensing of family day care homes, thus greatly improving their quality. Moreover, community parents would be embarked upon new careers -- with training, prestige, colleagues and the possibility of further upward mobility.

Very young children (< 1 year or 18 months) would probably spend all of the time away from their own parents at the home of a community parent. Older pre-schoolers would spend several hours per day in the core center, in a pre-school education program, and the remainder of the time away from their own parents with a community parent. Disadvantaged children of non-working mothers would utilize the educational program of the core center for several hours each day and then spend the remainder of the day in their own homes. This type of product would be in accordance with many parent's desire to have their children cared for in private homes,[65] and would raise the quality of care in such homes. Yet such a product would also provide the benefits of pre-school education. Napping, for younger children could take place in a private home and, of course parents who dislike institutional napping will prefer this arrangement. Lunch too could take place at the community parent's home. Although, in some low income areas, centers might wish to provide lunch in order to pay particularly close attention to their children's nutrition.

Parents might well take their children to the center in the morning but pick them up at the community parent's home in the afternoon or evening, or vice versa. Transportation between the center and the private home might be minimal, as in large cities where the core center and private homes might be in the same building; or transportation might be provided by the community parents or the center. The cost of such transportation would seem worthwhile; the turnover among community parents is likely to be less than the turnover among professional center personnel whose services have a wider market, and the stability of relationship with the community parent might well be beneficial for the children. Moreover, the transportation costs could easily be covered by savings in personnel costs

as a result of a "mixed" system. The high-cost services of professionals at the core center would be used less intensively by individual children. In addition, if children did not stay all day at a child care center, the staff-child ratios at the center could probably be lower than those now mandated. Presumably we could utilize nursery school type ratios (1:7 or 1:10) in the core center if some of the personal attention required by children came from the community parent setting where the adult-child ratio would be quite high (e.g. 1:4) and where perhaps not all of the children would be pre-schoolers. Additional savings could be effected if child care centers did not have to be equipped with nap rooms, kitchens, and cooks.

The location of child care centers in the community has important consequences.[66] Studies show that parents want child care near their own homes.[67] It is difficult for parents to travel long distances with young children, particularly in cold weather or in early or late hours. Moreover, community care makes it possible for older children to join pre-schoolers during vacations and after school hours.[68] Finally, local care makes it easier to enlist members of the community to volunteer their services.

For all of the reasons given earlier, teenagers should certainly be brought into the child care system. High schools (and junior high schools) should probably have formal programs which teach child development (to men as well as women) and teenagers should have an opportunity to put their training into practice, both during school time, under the supervision of their teachers, and after school, by volunteering. In some communities, where it seemed appropriate, teenagers might earn a training wage.

Senior citizens also might be utilized as volunteers, although certainly many of them might wish to be employees in the system. In conversations with child care center personnel I have learned that many centers find it difficult to effectively utilize volunteer senior citizens. Methods of better utilization of all volunteers should be researched and the findings well publicized, for optimum utilization will be important in lowering child care costs.

The feasibility of establishing internships at child care centers for persons in college programs of early childhood education should also be investigated. Intern (or practice teacher) programs are not only a source of low cost (or zero cost) labor, but also provide an on-going supply of trained personnel.

The third tier of an optimum child care system would consist of "practical parents."[69] These would be persons trained in child care and some practical nursing so that they could care for sick children while the children's parents work; they might possibly be licensed by the states. Practical parents could also be utilized to care for infants of working mothers in the child's own home during the first few months of life.

One reason why parents are reluctant to rely upon child care centers is because such centers seldom make arrangements for the care of sick children. Parents are, understandably, reluctant to call upon unknown adults, whose qualifications they cannot assess, to care for such children. It is also, obviously, extremely difficult for parents to arrange for sick-child care on very short notice (e.g. an hour or so after the family

awakens in the morning). If child care centers could "stand behind" practical parents, attesting to their qualifications and perhaps introducing them to parents and children prior to illness, and could also arrange for the dispatch of these persons on short notice, centers would be performing a crucial service for their clients as well as for their client's employers.

The costs of practical parent's services to sick children could be paid on a fee for service basis, or they could be pooled, with each family paying, in effect, an insurance premium. The two factors determining the cost of practical parents are: (a) the wage rate for such persons and (b) the frequency of illness among groups of children. The wage rate may be fairly easily determined. However, until some research is done regarding frequency of illness among groups of pre-school children, or until fully costed practical parent programs are put into operation, the cost of sick-child services will be very difficult to estimate.

An alternative to practical mothers, of course, is to set up an infirmary at the core center. However, unless it were done on a very large scale, it would undoubtedly be more expensive than sending practical parents to sick children's homes. Moreover, problems of contagion among children with different illnesses might be significant. Nevertheless, the infirmary model should no doubt be investigated.

FINANCING, OWNERSHIP AND CONTROL

Financing

While I believe there is a case for government subsidization of child care, based on the equity and externality arguments, I also believe that since the direct benefits of child care are substantial, parents should pay for a considerable portion of the service wherever possible. Moreover, the benefits to employers should probably, for reasons of equity, be appropriated through a tax. Funds for the system, therefore, should probably come from three sources -- general revenues, parents, and a tax on employers.

General revenues (mainly Federal, but possibly also state) would need to be used not only to support low income children, but also to set standards and evaluate quality, to provide technical assistance and overall planning, to support training and research programs, and to furnish initial equipment and construction or renovation funds. Thus all families (not merely low income families) would receive some government subsidization.

General revenue support for low income children can probably be most easily administered in the form of vouchers. The criteria for voucher eligibility, and in particular for the amount of the voucher, would have to be carefully worked out in order to avoid work disincentives. (This is similar to the negative income tax problem, but even more difficult because several vouchers may be involved in any one family). The amount of the voucher should probably be negatively related to family income and positively related to the number of hours worked by the mother and the

number of pre-school children in the family. An upper limit could be set on the number of children per family who could be subsidized if that seemed desirable. A sliding scale arrangement on the first two criteria would clearly be required. However, even a sliding scale and the use of multiple criteria, while helping to reduce work disincentives, can probably not entirely eliminate their occurrence.

I would certainly arrange the eligibility criteria so that low income children, regardless of whether or not their mothers work or attend school, could attend the core center portion of the day care system. This would be consonant with our earlier discussion of providing educational benefits for these children. At other income levels, mothers who do not work or attend school could also use the core centers, but most likely we would require that they pay for the services provided. I would, however, reserve the community parent's services for children of mothers who work, attend school, or are ill or handicapped.

The total governmental cost of the program will, obviously, be highly senstive to the particular income and hours formulae utilized for determining voucher eligibility. I am not prepared to say precisely what these formulae ought to be. The various alternatives and their costs need considerably more research. In particular, detailed estimates of likely utilization patterns and demand elasticities have to be worked out. Most probably, such information will have to come from pilot studies in particular communities, so that the operation of the "demonstration effect" may be observed. In addition, more information needs to be obtained

regarding administrative, construction and renovation costs.[70] Finally, it is of course, true that program costs will vary from community to community. In communities with large numbers of disadvantaged children, child care center systems would probably include elements budgeted for in the studies reviewed earlier, such as additional food, medical and dental services, clothing and emergency needs, social service professionals and expanded parent counselling. In other communities, such services might not be required, with resultant savings of approximately $400 per year per child.[71] Wages, transportation costs, rent, volunteer availability, illness and infant populations can also be expected to vary by community thus influencing total costs of particular programs. In all cases, of course, budgets should be submitted in advance and approved budgets adhered to by centers. Automatic passing on of increased costs, a problem which has so adversely affected other programs, (for example, Medicare) should be avoided through a system of prior budgetary review.

The tax on firms, referred to earlier, should be designed to capture employer benefits from a child care system; this tax, therefore, should fund only a small portion of the total. The tax should be on <u>all</u> employers, not only on those who employ women. First, we should be encouraging all employers to utilize women, at all levels of operation; second, we certainly should not penalize firms which employ women. The particular form which the employer tax should take needs to be examined, particularly with reference to tax shiftability.

Ownership and Control

There are obviously several possible ways in which systems of child care centers could be organized. Senator Long, for example, has suggested the establishment of a Federal Child Care Corporation.[72] The Department of Health, Education and Welfare, on the other hand, seems to prefer appending child care to existing school systems, thus giving primary ownership and control to state governments and local school boards.[73] I would suggest that at this early stage we might well experiment with several different forms of ownership and control.

One form, which presents some very interesting prospects, is that of a cooperative -- a system owned by the parents who use it. The system might, for example, be modeled on the Group Health Cooperative of Puget Sound, in Seattle, where the individual subscribers own the cooperative, hire physicians, make policy decisions, etc. Under a parent-owned system, parents, through elected officials, would hire a director, make basic decisions as to program and in general control the environment to which they send their children. Clearly, this experiment would not take place everywhere; not all parents would be willing or able to set up cooperatives. However, there is some evidence that interest in cooperative child care centers is growing and that cooperatives are a feasible form of day care.[74] Certainly, a full analysis of this economic form ought to be encouraged.

Accompanying a system of cooperatives (or perhaps even accompanying a Federal Child Care Corporation) should be a system of local planning and evaluation boards. Ideally these boards would consist of parents, child-development specialists, pediatricians, employer representatives

with management expertise, and local officials with knowledge of community resources. These local boards could be city or county-wide organizations; working with state agencies on matters of licensing and inspection; setting standards in conjunction with Federal regulations; assisting in locating appropriate core facilities, or if such are unavailable, in applying for capital grants from the Federal government; aiding in recruiting of personnel; approving center system budgets; working with existing community services, including local school boards; and providing for area-wide child care center planning

There are clearly advantages to tieing child care to existing school systems. But there are also disadvantages.[75] Before irrevocable decisions are reached, new forms of educational organization, such as the one suggested here, should surely be tried, experimentally, in some areas.

Conclusion

The decision to launch an extrafamily child care system must, of course, be made in the political, not in the economic arena. For economists alone obviously cannot make decisions balancing equities, determining priorities or evaluating the importance of particular externalities. Economics can however clarify issues, thereby contributing toward a more enlightened decision-making environment. A beginning has been made here. But, needless to say, there are additional economic matters to be investigated. Many of them have already been mentioned. Others concern the manpower (and womanpower) implications of the program. It is hoped that this paper will serve to stimulate some of this additional research.

Footnotes

* This paper was originally prepared for delivery at The Western Economic Association Meetings in Santa Clara, California, in August 1972. The author wishes to acknowledge helpful suggestions from Curtis Aller, Michael Boskin, Phyllis Craig, Robert Flanagan, Patricia Greenfield, James E. Howell, Cynthia Lloyd and Warren Sanderson. None of these persons, of course, bears any responsibility for the analysis contained herein.

1. Howard Hayghe, "Labor Force Activity of Married Women," Monthly Labor Review, April 1973, p.33.

2. Ibid., p.35.

3. See U.S. Department of Labor, Women's Bureau, Handbook on Women Workers, U.S. Government Printing Office, Washington, D.C., 1969, p.41.

4. Ibid.

5. Anne M. Young, "Children of Working Mothers," Monthly Labor Review, April 1973, p.37.

6. For example a new report on Stanford women reports that among the 1972 graduates, only 1/25 expected to be full-time housewives five years after graduation, and of those intending to work, only 7 percent said they would stop working to raise children. See Committee on the Education and Employment of Women, The Stanford Women in 1972, Stanford University Press, Stanford, 1972. See also, Denis F. Johnston, "The U.S. Labor Force Projections to 1990," Monthly Labor Review, July 1973, p.3, in which additional increases in the labor force participation rate of women are projected (but at a slower rate of increase as compared to the decade of the 1960's).

7. Four exceptions to the general lack of notice are a working paper by Richard R. Nelson, and Michael Krashinsky, "Some Questions of Optimal Economic Organization: The Case of Day Care for Children," The Urban Institute, December 1971; a paper by Mary P. Rowe, "Economics of Child Care," in Child Care, Hearings before the Committee on Finance, United States Senate, Ninety-Second Congress, First Session on S.2003 Child Care Provisions of H.R.1, and Title VI of Printed Amendment 318 to H.R.1, September 22,23 and 24, 1971; a chapter on child care in Charles L. Schultze, Edward R. Fried, Alice M. Rivlin, and Nancy H. Teeters, Setting National Priorities--The 1973 Budget, Brookings Institution, Washington D.C., 1972; and a working paper by Philip Robins, "The Demand For Child Care by DIME Families," Stanford Research Institute, May 1973.

8. Westinghouse Learning Corporation and Westat Research, Inc., Day Care Survey - 1970, Summary Report and Basic Analysis, prepared for Evaluation Division, Office of Economic Opportunity, 1971, pp.175-180. The ten percent figure for center use is, however, almost double the 5.6 percent figure for 1965. See Seth Low and Pearl G. Spindler, Child Care Arrangements of Working Mothers in the United States, U.S. Government Printing Office, Washington, D.C., 1968.

9. Westinghouse, op. cit, p.VII.

10. Mary D. Keyserling, Windows on Day Care, National Council of Jewish Women, New York, 1972, p.3.

11. Westinghouse, op, cit., p. VII.

12. Ibid., p.VI.

13. Keyserling, op. cit., p.5.

14. U.S. Department of Labor, Workplace Standards Administration, Women's Bureau, Day Care Services: Industry's Involvement, U.S. Government Printing Office, Washington, D.C., 1971, pp.11-12.

15. Ibid., pp.14-16.

16. U.S. Department of Labor, Wage and Labor Standards Administration, Women's Bureau, Child Care Services Provided by Hospitals, U.S. Government Printing Office, Washington,D.C., 1971, p.7.

17. See U.S. Department of Health, Education and Welfare, Children's Bureau, and Day Care and Child Development Council of America (CB-DCCDC), "Standards and Costs for Day Care," U.S. Government Printing Office, 1968; Abt Associates, Inc., A Study in Child Care, 1970-71 Abt Associates, Cambridge, Massachusetts, April 1971; and budget of National Capital Area Day Care Association, Inc., Washington, D.C., August 1968, cited in Gilbert Y. Steiner, The State of Welfare, The Brookings Institution, Washington, D.C., 1971.

18. CB-DCCDC Study, op. cit., p.1.

19. Ibid., Minimum quality is "the level essential to maintain the health and safety of the child, but with relatively little attention to his developmental needs." Acceptable quality provides "a basic program of developmental activities as well as providing minimum custodial care."

20. There appear to be some minor economies of scale in moving from centers with 25 to those caring for 50 or 75 children. The cost of "desirable" care drops from $2,349 per child in a 25-child center to $2,223 in a 50-child center to $2,189 in a 75-child center. The services of administrative and non-teaching personnel are used more efficiently in the larger centers.

21. U.S. Department of Health, Education and Welfare, Office of Education, National Center for Educational Statistics, Digest of Educational Statistics, 1970, U.S. Government Printing Office, Washington, D.C., 1970, Table 77, p.58.

22. "Federal Interagency Day Care Requirements," in Committee on Finance, U.S. Senate, Child Care Data and Materials, U.S. Government Printing Office, June 1971, p.149.

23. See Henry M. Levin, Survey of Day Care and Preschool Operations in San Francisco, San Mateo, Santa Clara and Alameda Counties, Unpublished Study, Stanford University, November 1971.

24. Keyserling, op. cit., pp.3, 142. I have converted the weekly costs to annual costs by multiplying by 52.

25. Ibid., p.5.

26. Westinghouse, op. cit., p. IX.

27. Ibid.

28. Ibid., p.204.

29. Ibid., p.163.

30. Betty Burnside, "The Employment Potential of AFDC Mothers in Six States," Welfare In Review, July-August 1971, p.18. The states included were California, Maine, Maryland, Minnesota, New York and Oaklahoma.

31. For a discussion of the way in which education affects employability of AFDC women, see Perry Levinson, "How Employable are AFDC Women?" Welfare In Review, July-August 1970.

32. Westinghouse, op. cit., p. XVI.

33. Ibid., p.206.

34. U.S. Bureau of the Census, Census of Population: 1970, General Population Characteristics, Final Report, PC (1) B1, United States Summary, U.S. Government Printing Office, Washington, D.C., 1972, Table 53, p.276.

35. The labor force participation rate for mothers with children 6-17 only was 50% in March 1972. See Hayghe, op. cit., p.33.

36. Keyserling, op. cit., p.2.

37. This figure is calculated by multiplying 2.5 million by $1,200, 5.6 million by $2,400 and 20 million by $653 and adding the products.

38. I will argue later that they should not depend solely upon income.

39. Westinghouse, op. cit., p.206.

40. For a discussion of the difficulties which proprietary operators encounter, see Joann S. Lublin, "Growing Pains," Wall Street Journal, November 27, 1972; and "Where Day Care Helps to Sell Apartments," Business Week, September 30, 1972.

41. Westinghouse, op. cit., p.206.

42. Rowe, op. cit., p.270.

43. Westinghouse, op. cit., Forward, p.2.

44. For some evidence that location is extremely important to parents see Westinghouse, op. cit., p.205 and Richard R. Rowe, (ed.), Child Care in Massachusetts: The Public Responsibility, Massachusetts Advisory Council on Education, 1972, Table 3-B.

45. E.J. Mishan, "The Postwar Literature on Externalities: An Interpretive Essay," Journal of Economic Literature, March 1971, p.2.

46. For some evidence regarding fading, see Thomas I. Ribich, Education and Poverty, The Brookings Institution, Washington, D.C., 1968, pp.78-82.

47. For example, although the number of women and men graduating from high school is about the same, with slightly more women graduating than men, women in 1967 accounted for only 40 percent of the college and university enrollment,,40 percent of the Bachelors or first professional degrees earned, 35 percent of the Master's degrees earned and only 12 percent of the Doctor's degrees earned. See Handbook on Women Workers, op. cit., pp.187-191. It is assumed here that lower levels of educational investment for women do not stem from lesser abilities of women.

48. It would appear that with regard to welfare mothers our social welfare function may be changing. I would argue on equity grounds that all women should be treated equally and that the option to pursue full-time child rearing should be open to all -- including welfare mothers.

49. See U.S. Department of Labor, Wage and Labor Standards Administration, Women's Bureau, Facts About Women's Absenteeism and Labor Turnover (Washington, D.C.: 1969).

50. Merchants and Manufacturers Association, Labor Turnover Handbook (Los Angeles: 1970).

51. Facts About Women's Absenteeism, op. cit., p.6.

52. Given the legal requirements specified above, lower wages result because of an increase in supply per se, not because of an increase in the female component of that supply .

53. This is not meant to be a complete discussion of the relationship between education and fertility. For a more exhaustive treatment see, for example, Robert T. Michael, "Education and the Derived Demand For Children," Journal of Political Economy, March/April 1973, pp.S128-S164.

54. Gary S. Becker and H. Gregg Lewis, "On The Interaction Between The Quantity and Quality of Children," Ibid., pp.S279-S288.

55. Dennis N. De Tray, "Child Quality and the Demand For Children," Ibid., pp.S70-S95.

56. Arleen Leibowitz, "Education and the Allocation of Women's Time," Mimeo. New York: NBER, 1972, p.22.

57. See for example, U.S. Department of Commerce, Bureau of the Census, Current Population Reports: Special Studies, Fertility Indicators: 1970, Series P-23, No. 36, April 16, 1971, Table 15, p.29.

58. De Tray, op. cit., p.589.

59. Ibid.

60. Glen G. Cain, "The Effect of Income Maintenance Laws on Fertility in the United States," Discussion Paper #117, Institute For Research on Poverty, University of Wisconsin, 1972, p.28. It is important to note that Cain believes the effect of taste changes will not outweigh the subsidy effect. However, many of the taste changes considered here are not analyzed by Cain.

61. William V. Shannon, "A Radical, Direct, Simple, Utopian Alternative to Day-Care Centers," New York Times Magazine, April 30, 1972.

62. Jerome Bruner, "Overview on Development and Day Care," in Edith H. Grotberg, (Ed.), Day Care: Resources For Decisions, Office of Planning Research and Evaluation, U.S. Government Printing Office, Washington D.C., June 1971, p.96.

63. See "Public Assistance In January and February 1970," Welfare In Review, July-August 1970, p.23.

64. Researchers in education have already had success in training mothers as para-professional teachers. See Merle B. Karnes, R. Reid Zehrback and James A. Teska, "A New Professional Role in Early Childhood Education," Interchange, Vol.2, No.2, 1971.

65. See Mary Rowe, op. cit., pp.265-268.

66. One unfortunate consequence is that, as a community based scheme, it does nothing to further racial integration.

67. Mary Rowe, op. cit., p.262.

68. However, better use of existing school buildings for care of school-age children during these periods should also be investigated by the community.

69. The term "practical mother" was used by Alice S. Rossi in her "Equality Between the Sexes: An Immodest Proposal," in Robert Jay Lifton (Ed.) The Woman In America, Beacon Press, Boston, 1967.

70. According to the Women's Bureau Study of industry's involvement in day care (see note 14), the cost of building a facility in the three cases noted varied widely, from $36,000 for 50 children to $56,000 for 49 children and $98,000 for 118 children.

71. See CB-DCCDC, op. cit.

72. Senator Long, Child Care Hearings, op. cit., p.9.

73. Elliot L. Richardson, Ibid., p.96.

74. See Elizabeth Lewicki, "A Study of Cooperative Full-Day Care Centers In The Mid-Peninsula Area," Mimeo, (Student paper) Stanford Graduate School of Business.

75. Acquisition of excess space and administrative personnel of school systems, teacher training, provision of care for school age children, and follow up of pre-school education programs might be easier if child care systems were tied to school systems. On the other hand, critics of school systems would not want to see what they regard as current bureaucratic and educational deficiencies transferred to younger children's programs.